



XXIV Congresso dell'Associazione Italiana di Oceanologia e Limnologia

Centro Congressi, Area della Ricerca del CNR
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Innovative approaches for the evaluation of the ecological conditions and ecosystems functionality of alpine lakes and rivers: the Interreg Alpine Space project *Eco-AlpsWater*

Eco-AlpsWater is a project co-financed by the European Regional Development Fund (ERDF) through the Interreg “Alpine Space” programme. The aim of the project is to improve the traditional water monitoring approaches utilized in the Alpine region (Water Framework Directive-WFD in EU countries and Water Protection Ordinance-WPO in Switzerland) with innovative technologies, providing solid knowledge to support lake and river management plans. The new approach will make use of Next Generation Sequencing (NGS) techniques to analyse environmental DNA (eDNA) extracted from samples collected in lakes and rivers. These new techniques, based on the amplification and analysis of millions of DNA sequences, allow rapid and low cost identification of aquatic organisms. The new generation monitoring will permit to carry out one of the most extensive census of lakes and rivers biodiversity of the Alpine region based on the analysis of hundreds of samples collected in over 50 water bodies. The investigations will focus on the study of bacteria and cyanobacteria, phytoplankton, periphytic communities (including diatoms) and fish. The collected data will allow to identify the areas at risk of toxic cyanobacteria, pathogenic bacteria and alien or potentially invasive organisms. The project, started in 2018 and operational until April 2021, involves 12 partners belonging to 6 countries in the Alpine region (Austria, France, Germany, Italy, Slovenia and Switzerland). The research, started in the first months of 2019, in the Italian context will in particular evaluate the ecological quality of two key environments representative of the great lakes (Garda) and rivers (Adige) south of the Alps. During the summer months, the survey will be extended to a greater number of lakes and rivers, including other great lakes of the network LTER IT08-Subalpine lakes, small lakes (for example Ledro, Caldaro, Ragogna) and rivers.

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